

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims:

No claims are currently being cancelled.

Claims 1-5 are currently being amended.

Claims 6-8 are currently being added.

This amendment amends and adds claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending and adding the claims as set forth above, claims 1-8 are pending in this application.

Claim Rejections – Prior Art:

In the Office Action, claims 1-5 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,010,569 to Katagawa. This rejection is traversed with respect to presently pending claims 1-5, for at least the reason given below.

Katagawa discloses a call transfer device used in a communication system for transmitting a voice signal from a voice terminal apparatus to an opposite-side communication apparatus (opposite-side voice terminal apparatus), for example, for transferring and outputting a DTMF signal intermingled with the voice signal to the opposite-side communication apparatus. Katagawa's call transfer device includes a signal receiving means for receiving a DTMF signal from a voice terminal apparatus, a signal generating means for generating a DTMF signal with the same code as the received DTMF signal when the DTMF signal is received by the signal receiving means, and a forwarding means for outputting the DTMF signal generated by the signal generating means to the opposite-side communication device. See, for example, claim 1 of Katagawa.

On the contrary, the present invention according to claim 1 is directed to a DTMF data generating apparatus which is used in a communication system that code-compresses and transmits a voice signal to an opposite-side communication apparatus and which generates

DTMF data for reporting a DTMF signal that is intermingled with the voice signal to the opposite-side communication apparatus. The DTMF data generating apparatus of claim 1 comprises: a) a DTMF code information generating unit for detecting the DTMF code of a DTMF signal to be reported to the opposite-side communication apparatus and generating DTMF code information on the basis of the result of detection, b) a duration time information generating unit for detecting the output duration time of the DTMF signal to be reported to the opposite-side communication apparatus and generating duration time information on the basis of the result of detection, and c) a DTMF data generating unit for generating DTMF data including the destination information of the opposite-side communication apparatus, the DTMF code information generated by the DTMF code information generating unit and the duration time information generated by the duration time information generating unit.

The present invention according to claim 1 is utilized in a communication system for code-compressing and transmitting a DTMF signal intermingled with a normal voice signal to an opposite-side communication apparatus, and whereby the subject matter of claim 1 is directed to a DTMF data generating apparatus for generating DTMF data for reporting a DTMF signal that is intermingled with the voice signal to the opposite-side communication apparatus. When the DTMF signal is code-compressed by the sending side along with the voice signal and transmitted to the opposite-side communication apparatus on the receiving side, for example, even if the opposite-side communication apparatus on the receiving side decodes the code-compressed DTMF signal along with the voice signal, the DTMF signal does not correspond to any known receiving rule, and thus the opposite-side communication apparatus on the receiving side can not recognize the DTMF signal before code compression.

In order to solve such a situation, the DTMF data generating apparatus according to claim 1 has a DTMF code information generating unit for detecting the DTMF code of a DTMF signal to be reported to the opposite-side communication apparatus and generating DTMF code information on the basis of the result of detection, a duration time information generating unit for detecting the output duration time of said DTMF signal to be reported to the opposite-side communication apparatus and generating duration time information on the basis of the result of detection, and a DTMF data generating unit for generating DTMF data including the destination information of the opposite-side communication apparatus, the DTMF code information generated by the DTMF code information generating unit and the duration time information generated by the duration time information generating unit,

wherein when the DTMF signal is detected, DTMF code information is generated on the basis of the DTMF code of the DTMF signal. Further, the duration time information is generated on the basis of the output duration time of the DTMF signal, and the DTMF data including the destination information, DTMF code information and duration time information is generated so that the DTMF signal before code compression can be recognized by the opposite-side communication apparatus on the receiving side, and the DTMF data is transmitted to the opposite-side communication apparatus on the receiving side. Therefore, even if the DTMF signal is code-compressed along with the voice signal, the DTMF signal before code compression can be recognized by the opposite-side communication apparatus on the receiving side.

On the other hand, in Kanagawa, which is not directed to a communication system for code-compressing and transmitting a DTMF signal to an opposite-side communication apparatus along with a normal voice signal (code-compressed communication system), but rather is directed to an analog communication system for intercommunication of a DTMF signal sent with a voice signal through an analog line (communication line) without voice code compression in order to solve a situation that the level of the DTMF signal is lowered according to transmission loss of the communication line when the line distance of the analog line is far, a DTMF signal is received, a DTMF signal with the same code as the DTMF signal is generated and the DTMF signal is outputted at a raised level so as to solve the situation that the level of the DTMF signal is lowered due to transmission loss of the communication line.

That is, the subject matter of claim 1 is totally different from that of Kanagawa's system in that a communication system for intercommunication by voice code compression of a DTMF signal intermingled with a normal voice signal (code-compressed communication system) is utilized in the present invention, whereby such features are not disclosed or suggested by Kanagawa. Moreover, the present invention according to claim 1 is totally different from Kanagawa's system in that by transmitting the duration time information and the DTMF code information of the DTMF signal from the sending side in the present invention, the opposite-side communication apparatus on the receiving side can recognize the DTMF signal before code compression by reproducing the DTMF signal for the output duration time based on the duration time information and DTMF code information.

Therefore, for at least the reasons given above, presently pending claim 1 is not anticipated by Kanagawa.

With respect to presently pending independent claim 4, that claim is directed to a DTMF data generating method which is used in a communication system for intercommunication by voice code-compressing a DTMF signal intermingled with a voice signal, comprising the steps of detecting the DTMF code of a DTMF signal to be reported to the opposite-side communication apparatus and generating DTMF code information on the basis of the result of detection, detecting an output duration time of the DTMF signal to be reported to the opposite-side communication apparatus and generating duration time information on the basis of the result of detection, and generating DTMF data including the destination information of the opposite-side communication apparatus, the DTMF code information and the duration time information. When the DTMF signal is detected, the DTMF code information is generated on the basis of the DTMF code of the DTMF signal in addition to the destination information of the opposite-side communication apparatus. Moreover, duration time information is generated on the basis of the output duration time of the DTMF signal and the DTMF data including the destination information, DTMF code information and duration time information is generated, so that the opposite-side communication apparatus on the receiving side can recognize the DTMF signal before code compression, and the DTMF data is transmitted to the opposite-side communication apparatus on the receiving side. As a result, the present invention according to claim 4 is totally different from the disclosure in Katagawa in the point that the DTMF signal before code compression can be recognized by the opposite-side communication apparatus in the present invention according to claim 4 even if the DTMF signal is voice code-compressed, which is a feature not possible in the system of Katagawa.

Also, the present invention according to presently pending independent claim 5 is directed to a DTMF data structure for being used in a communication system for intercommunication by voice code-compressing a DTMF signal intermingled with a voice signal for reporting the DTMF signal intermingled with the voice signal to the opposite-side communication apparatus, comprising a destination information storing area for storing destination information indicating the destination of the opposite-side communication apparatus to be notified of the DTMF signal and a DTMF content information storing area for storing DTMF code information indicating the code of a DTMF signal to be reported to the opposite-side communication apparatus and duration time information indicating the output duration time of a DTMF signal to be reported to the opposite-side communication apparatus.

Since the opposite-side communication apparatus on the receiving side can generate the DTMF signal before code compression on the basis of the DTMF code information and duration time information being stored in the DTMF content information storing area of the received DTMF data, the invention according to claim 5 is totally different from the disclosure in Katagawa in that the DTMF signal before voice code compression can be recognized in the present invention according to claim 5 even if the DTMF signal is voice code-compressed, whereby such a feature is not possible in the system of Katagawa.

New Claims:

New claims 6-8 have been added to recite additional features of the present invention that are believed to provide a separate basis for patentability of these claims.

Conclusion:

Since all of the issues raised in the Office Action have been addressed in this Amendment and Reply, Applicants believe that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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